

KLICKITAT PASSAGE/HABITAT PRELIMINARY DESIGN

9506800

SHORT DESCRIPTION:

Conduct an integrated watershed analysis of the Klickitat Basin using fisheries, population, habitat, and engineering surveys to develop a preliminary design of the passage and habitat improvements that will directly benefit salmonids and provide information to be used for patient/template style analysis and future supplementation activities.

SPONSOR/CONTRACTOR: YKFP

Yakama Indian Nation

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SUB-CONTRACTORS:

Summit Technology Consulting Engineers, Inc. 615

Second Ave. Seattle, WA. 98104 International Statistical

Training and Technical Services, 712 12th St. Oregon City,

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W. Stanwood, WA. 98292

GOALS

GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection, Adaptive management (research or M&E), Program coordination or planning, Passage for Klickitat River anadromous fish stocks

ANADROMOUS FISH:

Habitat or tributary passage

NPPC PROGRAM MEASURE:

7.4K.1

RELATION TO MEASURE:

The Yakima/Klickitat Fisheries Project is included in the NPPC Fish and Wildlife Program. The Outlet Creek site on the Klickitat River was originally identified as the a potential supplementation facility (USFW 1979). In addition to a potential supplementation facility the Klickitat River was also identified as an area for passage and habitat improvements. In Appendix Table A of the NPPC 1987, the Klickitat River was identified as an area for providing increased passage and habitat for chinook, coho and steelhead.

TARGET STOCK

Klickitat River Bull Trout

Klickitat River Coho

Klickitat River Summer/Fall Chinook

Klickitat River Winter Steelhead

Klickitat River Summer Steelhead

Klickitat River Spring Chinook

LIFE STAGE

All

Pre-spawning adult through smolt

Pre-spawning adult through smolt

Pre-spawning adult through smolt

Pre-spawning adult through smolt

Pre-spawning adult through smolt

MGMT CODE (see below)

S, W

S

S, W

N

S, W

S, W

AFFECTED STOCK

Klickitat basin West slope cutthroat trout

Klickitat Basin rainbow trout

Pathogens

Competitors

Mutualist

Predator

BENEFIT OR DETRIMENT

Neutral

Neutral

Neutral

Neutral

Beneficial

Beneficial

BACKGROUND

Stream name:

Klickitat River and tributaries

Subbasin:

Klickitat River

Stream miles affected:

250

Land ownership:

Tribal, State, Private, Federal

HISTORY:

The Yakima/Klickitat Fisheries Project has been included in the Council's Fish and Wildlife Program. The Council's 1987 Fish and Wildlife Program presented measures specifically for the Klickitat River. This Project initiates the preliminary design work needed to complete a Preliminary Design Report for the Klickitat Subbasin (KRS). The approach used is an integrated watershed analysis that will produce specifics for implementing the habitat and passage improvements needed in the KRS, as listed in the Yakima/Klickitat Production Project Design Report (BPA 1989), Appendix A and Appendix B.

Tasks undertaken in 1995-96

- A. Began adult and juvenile surveys of salmon and steelhead, and resident fish.
- B. Began monitoring populations of anadromous fish at two juvenile fish traps
- C. Began habitat inventory for carrying capacity assessment of anadromous fish habitat.
- D. Began evaluation of passage problems at Lyle and Castile Falls.
- E. Began coordinating data collection with the Coordinated Information System.

BIOLOGICAL RESULTS ACHIEVED:

The biological results achieved to date are presented in the 1995 draft final report submitted to BPA. The results are presented in the form of baseline information on the anadromous fish stocks in the Klickitat basin. Species presence/absence studies and population estimates information is being collected. This information will be incorporated into a patient template analysis to direct habitat and passage improvement projects.

PROJECT REPORTS AND PAPERS:

Preliminary Design of Passage and Habitat improvement in the Klickitat River 1995, draft final report.

Adult Passage Improvements for Klickitat River at Lyle and Castile Falls 1996, prepared by Summit Technology.

Fast, D.E et al. 1989. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120 Grant DE-A179-88BP93203.

Hubble, J.D. et al. 1990. Yakima/Klickitat Natural Production and Enhancement Program. Prepared for Bonneville Power Administration. Project No. 88-120 Grant DE-A179-88BP93203.

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ADAPTIVE MANAGEMENT IMPLICATIONS:

The YKFP has formally adopted adaptive management through the Policy Group. It has been stated that adaptive management is essential as the principals of supplementation are tested and explored. Information collected from tasks in this project will allow the managers to utilize adaptive management in the design process used to determine priorities of subsequent habitat/passage and supplementation projects in the Klickitat basin.

PURPOSE AND METHODS**SPECIFIC MEASUREABLE OBJECTIVES:**

To test the assumption that habitat/passage improvement techniques and supplementation activities can be used in the Klickitat Basin to increase natural production and to improve harvest opportunities, while maintaining the long-term genetic fitness of the native salmonids population and keeping adverse ecological interactions within acceptable limits.

To provide knowledge about the use of habitat/passage improvement projects and supplementation, so that it may be used to enhance anadromous fisheries throughout the Columbia River Basin.

The specific objectives of the Klickitat project are to:

- 1) Characterize the physical attributes of each stream and tributary surveyed.
- 2) Determine the summer distribution and abundance of juvenile fish by species in the mainstem and selected tributaries.
- 3) Conduct salmon spawner ground surveys in the Klickitat Basin.
- 4) Evaluate the effectiveness of the current monitoring sites in terms of logistics and to meet YKFP monitoring needs.
- 5) Collect life history data from both wild and hatchery salmonid outmigrants
- 6) Collect historical information that will be beneficial to model the template for future patient-template analysis for the Klickitat River.
- 7) Develop specifics from Phase I engineering investigations into the primary passage problems (Lyle and Castile Falls) on the Klickitat River.

CRITICAL UNCERTAINTIES:

An uncertainty associated with this project is whether the flow to entrainment relationship for the rotary screw traps (population monitoring) can be developed with a high degree of statistical certainty.

BIOLOGICAL NEED:

The underlying need for the project is to provide baseline information from fisheries surveys, population monitoring, habitat inventories and engineering surveys of passage barriers to develop a Preliminary Design Report for the Klickitat River subbasin.

HYPOTHESIS TO BE TESTED:

NA

ALTERNATIVE APPROACHES:

All methods of field data collection were reviewed. Based on knowledge of existing in-basin conditions and biological data for YKFP, particular standardized methods were selected.

JUSTIFICATION FOR PLANNING:

Assessment. This study is needed to provide baseline information to direct future efforts for habitat and passage improvement projects and supplementation activities.

METHODS:

Conduct standardized fisheries and habitat inventories to direct future habitat/passage improvements and potential supplementation activities that have the greatest chance for success. Specific techniques include; Electrofishing, snorkeling, spawner surveys, rotary screw trap operation, Timber, Fish and Wildlife (TFW) Ambient Monitoring Stream habitat inventory, and EPA Rapid Bioassessment .

PLANNED ACTIVITIES

SCHEDULE:

PROJECT COMPLETION DATE:

Unable to determine at this time.

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

NEPA analysis and permitting requirements for habitat passage improvement projects. Coordination and consent between county, federal, state, and private landowners.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

Detailed information from fisheries surveys, population monitoring , habitat inventory and engineering surveys will produce specifics measures and tasks for implementing the passage and habitat improvements. Information will used by patient-template modelers to guide future supplementation in the Klickitat River subbasin.

Present utilization and convservation potential of target population or area:

Anadromous fish from the Klickitat River are caught in commercial , sport, and tribal subsistence/ceremonial fisheries in the ocean, Columbia River and Klickitat River. Conservation potential for all Klickitat River stocks is good due to the relatively intact nature of the Klickitat basin.

Assumed historic status of utilization and conservation potential:

Tribal subsistence and ceremonial fisheries. Assumed conservation potential was very high.

Long term expected utilization and conservation potential for target population or habitat:

Naturally reproducing stocks of anadromous fish, to meet escapement goals, sport and commercial harvests, and tribal subsistence and ceremonial purposes.

Contribution toward long-term goal:

Increase the number of returning adults and naturally reproducing adults to the target population. Increase the information on the feasibility of using supplementation to rebuild natural populations of salmonids. Baseline life history information on Klickitat River spring and summer/fall chinook, coho, and summer and winter steelhead.

Indirect biological or environmental changes:

Expanding use of anadromous stocks to newly accessible areas opened up through passage improvement projects. Increased natural production and resultant carcasses will add nutrients to the entire subbasin.

Physical products:

Detailed design drawing of proposed improvements to the Lyle Falls #5 fishway has been developed. Preliminary design drawing of potential improvements to the Castile Falls complex have been developed. Physical products such as passage and habitat improvement projects will be developed as part of this study.

Environmental attributes affected by the project:

NA

Changes assumed or expected for affected environmental attributes:

NA

Measure of attribute changes:

NA

Assessment of effects on project outcomes of critical uncertainty:

Use standard fisheries inventories for monitoring short and long range goals of this project. Fisheries and habitat survey data will be used to resolve critical uncertainties which developed.

Information products:

Characterization of the physical attributes for mainstem and selected tributaries. Distribution and abundance of juvenile and adult

s in the mainstem and tributaries. Evaluation of the effectiveness of the current monitoring sites in terms of logistics and to meet YKFP monitoring needs. Collection of life history data of salmonids species present in the Klickitat basin.

Coordination outcomes:

Coordination activities to date include; Genetic Stock Identification (GSI) of Klickitat spring, summer/fall chinook, and steelhead with WDFW. Coordination with WDFW Hatchery personnel on fish releases and marking methods. Coordination with WDFW habitat engineers for evaluation and maintenance of passage facilities on the mainstem Klickitat River. Coordination and contract development with Summit Technology Consulting Engineers to begin detailed evaluation of the passage facilities. Coordination and contract development with International Statistical Training and Technical Services to conduct flow to entrainment relationship for population monitoring.

MONITORING APPROACH

Monitor an increase in natural production of salmonids stocks associated with particular habitat/passage improvements or supplementation activities.

Provisions to monitor population status or habitat quality:

Conduct standardized fisheries surveys to determine if habitat and passage improvement projects result in increased natural production. Monitoring of riparian habitat projects will be conducting using photo documentation.

Data analysis and evaluation:

Use YKFP patient-template analysis to direct habitat and passage improvements as well as any future supplementation activities.

Information feed back to management decisions:

Through YKFP/BPA scheduled reports, uncertainty resolution plans, meetings, and Project Annual Review (PAR).

Critical uncertainties affecting project's outcomes:

None are anticipated at this point.

EVALUATION

Increased numbers, and available population of naturally reproducing stocks. Increase fish use into areas previously devoid or under utilized by anadromous fish.

Incorporating new information regarding uncertainties:

As part of an adaptive management approach.

Increasing public awareness of F&W activities:

Through tribal news letters, local television interviews, and newspaper articles. Personal communications with concerned citizens at our high profile juvenile monitoring stations on the lower Klickitat River.

RELATIONSHIPS

RELATED BPA PROJECT

9602000

9506404 Policy/Technical Involvement and Planning for YKFP

RELATIONSHIP

Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. PIT-tag hatchery fish, multiple states.

The Policy Group must approve directs habitat/passage improvements and future supplementation activities to be developed under this project before they can be implemented. Policy and technical involvement and planning, YKFP.

9506402	Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Upper Yakima species interaction studies.
9506401	Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Refinement of marking methods for YKFP.
5507700 Monitoring of Supplementation Response Variables for YKFP	Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Monitoring of supplementation response variables for YKFP.
8903000 Effects of Acclimation on the Survival of Spring Chinook Salmon	8903000 will provide essential data on the performance of hatchery-reared smolts which will be used by this project in designing and evaluating future projects. Effects of acclimation on the survival of spring chinook salmon.
9506800 Klickitat Passage/Habitat Preliminary Design	95-68 will result in the collection of environmental and life history data that this project will make use of at a future date to design enhancement projects in the Klickitat Basin. Initiate the tasks needed to provide basic information from fisheries surveys, population monitoring, habitat inventory & engineering surveys for passage barriers for Preliminary Design Report (Klickitat Basin).
9006300	90-63 Incorporate ideas, procedures, and successes into future Klickitat River M&E activities. Develop and test M&E plans for YKFP.
9006900 Yakima Hatchery - Final Design	90-69 Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Final design for upper Yakima spring chinook acclimation sites and wells.
8811500	88-115 Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Design/construction of upper Yakima spring chinook facilities for YKFP.
8812010	8812010 Incorporate ideas, procedures, and successes into future Klickitat River supplementation activities. Chandler certification study.
8812009	8812009 Incorporate information and generated patient -templet computer models to guide data collection, supplementation activities, and to direct habitat/passage improvement activities. Development of enhancement strategies for coho; development of stochastic models for progress assessment for spring/fall chinook and steelhead.
8812008 Fisheries Technician Field Activities	8812008 Use technician support for Klickitat field activities. Technical personnel support for field data collection, Task assignments and special projects consistent with YKFP objectives and needs.
8812004	8812004 Produces a skilled tribal manpower pool for the YKFP, with personnel utilized on the Klickitat Project. Training Assistance for Personnel for YKFP needs

OPPORTUNITIES FOR COOPERATION:

Cooperation between the Washington Dept. of Fish and Wildlife (WDFW) and the Yakama Indian Nation Fisheries Program (YINFP) as co-managers in the YKFP is ongoing. Additional opportunities for cooperation between YINFP and the WDFW Habitat Division are underway. YIN and WDFW will identify areas for habitat improvement projects, as well as, information sharing and coordinated data collection in the future. The AmeriCorps Volunteer Program has been used on related projects in the

Klickitat basin and will be used to assist with future habitat improvement projects. Information coordination with WDFW on the spatial distribution of Klickitat River Bull Trout *Salvelinus confluentus* will continue.

COSTS AND FTE

1997 Planned: \$0

1997 Planned: \$776,500

FUTURE FUNDING NEEDS:

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$823,048	15%	70%	15%
1999	\$924,775	15%	70%	15%
2000	\$924,775	20%	60%	20%
2001	\$924,775	10%	10%	80%
2002	\$210,000	10%	10%	80%

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>OBLIGATED</u>
1995	\$691,049
1996	\$15,050
1997	\$610,381

TOTAL: \$1,316,480

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

OTHER NON-FINANCIAL SUPPORTERS:

US Fish and Wildlife Service, Lower Snake River Compensation Plan, USDA Forest Service, Nez Perce Tribe, Idaho Department of Fish and Game

LONGER TERM COSTS: \$210,000.00

Continued implementation

1997 OVERHEAD PERCENT: 26%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

Portion of direct costs: personnel and fringe benefits

CONTRACTOR FTE: 4

SUBCONTRACTOR FTE: 0
